Thermo Recorder
Push Wireless RTR-61 Warranty

Customer's name:	
Address:	
Phone No.:	
Dealer's name:	
Address:	
Phone No.:	
Guarantee period	12 months from date of purchase
Date of purchase	

Statement of Limited Warranty

1. This product is warranted to be free from defects in materials and workmanship for a period of one (1) year following the date of purchase. Should the product fail to operate per specification in normal use during this period T&D will repair the unit or provide a replacement free of charge. T&D will not accept returns for any reason other than defects during the warranty period, and will not accept any product that has been misused, dropped, abused or inappropriately used or mistreated at any time.
2. This warranty is strictly limited to repair or replacement-in-kind for defective product. T&D makes no other warranty, either express or implied, and will not accept liability beyond the remedies stated herein. Specifically, T&D will not accept liability for direct, indirect, special, consequential or incidental damages arising from the use of this product.
3. Customers wishing to submit a defective product for repair or replacement during the warranty period should first contact the dealer from whom it was originally purchased. After receiving a return authorization the defective product should then be packaged along with a description of the difficulties being experienced, proof of purchase and all included accessories and materials, and return it to the dealer. In the event of difficulty contacting the original dealer, customers should contact the nearest authorized T&D sales representative. A list of these can be found on the company' s website, www.tandd.com, or it can be obtained by contacting TandD US directly.
4. This limited warranty statement gives the customer specific legal rights. The customer may also have other rights which vary from state to state in the United States, from province to province in Canada, and from country to country elsewhere in the world. To the extent this limited warranty statement is inconsistent with local law, this statement shall be deemed modified to be consistent with such local law.
5. For further information relating to product repair or replacement, or for other service questions after the termination of the warranty period, customers should contact their local authorized T&D sales representative.

T&D CORPORATION

Thermo Recorder
Push Wireless RTR-61

Wireless Core Temperature Data Logger
User's Manual

T&D CORPORATION
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Website: http://www.tandd.com/

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■ Safety Precautions and Requests

*Please carefully observe the following safety measures when using our product.

To prevent any loss or damage to our customers, other people and / or property, and to ensure the proper use of our products we ask that before using our product you carefully read, understand and follow the safety rules and precautions for our products as outlined below.

【Explanation of Symbols】

⚠ DANGER	These entries are actions that absolutely under no circumstance should be taken. The taking of such an action may cause serious personal physical damage or death.
⚠ CAUTION	These entries are actions that if taken may lead to physical injury or damage to persons or things.

【Explanation of Picture Symbols】

△	Denotes an important warning or caution. Inside or near the symbol will appear another symbol giving details. (EX: ⚠···Be careful of electrocution)
⃠	Denotes a forbidden action. Inside or near the symbol will appear another symbol giving details. (EX: Do not use in wet areas.)
●	Denotes an action that you must take. Inside or near the symbol will appear another symbol giving details. (EX: Unplug power plug from outlet)

DO NOT POINT THE SENSOR TOWARD HUMANS OR USE IN WAYS OTHER THAN THOSE FOR WHICH THIS PRODUCT WAS DESIGNED

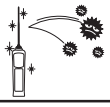
Because the sensor has a sharp tip, there is a risk of accidentally stabbing people and/or objects. Do not use the sensor for any purpose other than measuring the temperature of objects for which it was designed and store in a safe place when not in use.

DO NOT TOUCH SENSOR IMMEDIATELY AFTER MEASUREMENT

Please be careful when using in extreme hot or cold environments; touching the unit may cause burns or frostbite.

CLEAN AND STERILIZE UNITS BEFORE AND AFTER USE

Before and after using, please clean to remove any substances attached to the surface and sterilize the units in order to prevent the growth of bacteria.



DAILY MAINTENANCE

If the unit gets dirty, wipe it with a clean cloth dipped in alcohol; DO NOT WASH with WATER.
NEVER use an acid, alkaline, or chlorine based detergent. This will cause harm to the electric components in the unit.

⚠ DANGER

- Do not take apart, repair or modify the main unit. This may cause fire or electrocution.
- If any smoke or strange smells are emitted from the unit, immediately cease using it. Continued use may cause fire, electrocution or damage.
- Do not use any batteries other than those that are recommended. It may cause fire or damage.
- If water or a foreign object enters the case, immediately cease using it. Continued use may cause fire, electrocution or damage.
- The RTR-61 is a devices to measure temperature. Do not use this unit for any purpose other than temperature measurement.
- Store all batteries, sensors and Thermo Recorder units out of the reach of children. It is dangerous to swallow batteries.

⚠ Wireless Regulations

Radio, EMC and Safety Regulations

FC This device complies with part 15 of the Federal Communications Commision (FCC) rules and with RSS-210 of the Industry Canada (IC).
Operation is subject to the following conditions:
(1) This device may not cause harmful interference, and
(2) This device must accept any interference received, including interference that may cause undesired operation.

Note:
This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures :
- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

Warning to users
The user that changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

⚠ CAUTION

- We are not responsible for any damage, malfunction or trouble, whether direct or indirect, caused by the use of our product. Please be fully aware of this before using our product.
- This product has been designed for private or industrial use only. It is not for use in situations where strict safety precautions are necessary such as in connection with medical equipment, whether directly or indirectly.
- To prevent damage to the unit from static electricity, remove static electricity from your body by touching metal around you (door knob, window frame) before touching the unit. Static electricity may cause not only damage to the unit, but may cause breaks in or a loss of data.
- Use these units under conditions with an ambient temperature of -10 to 60℃ .
- The RTR-61 only becomes water resistant (IP64 splash resistant) if the temperature sensor has been connected. Without the sensor connected, the connector part of neither the main unit nor the temperature sensor is water resistant; make sure not to get wet.
- Do not expose the unit to harmful gases or chemicals. It may cause corrosion and/or other danger to the unit and to people handling the unit.
- Do not drop the unit, or expose the unit to a strong impact. If that happens to the unit, immediately remove the batteries and stop using. Continued use may cause fire or electrocution.
- Battery terminals may provide insufficient contact due to age or vibration. This may lead to data loss.
- Battery life depends on the measurement environment, communication frequency, recording interval and battery quality.
- If the unit will not be used for period of time, for safety reasons please remove the battery. If left in the unit, it may leak and lead to malfunctioning.
- Do not use or store the unit in places such as listed below:
  -Areas exposed to direct sunlight
  -Areas exposed to water or high-pressure water flow.
  -Areas exposed to organic solvents and corrosive gas.
  -Areas exposed to strong magnetic fields
  -Areas exposed to static electricity.
  -Areas exposed to fire or overheating.
  -Areas exposed to excessive dust or smoke.

■ Product Specifications

Measurement Item	Temperature		
Measurement Channels	1 Channel		
Measurement Range	− 25℃ to 235℃		
Temperature Sensor	Thermistor		
Measurement Accuracy	Less than 10℃ : ± 1.5℃	130℃ to 150℃ : ± 1.0℃	
	40℃ to 105℃ : ± 1.0℃	150℃ to 180℃ : ± 1.5℃	
	40℃ to 85℃ : ± 0.8℃	180℃ to 200℃ : ± 2.0℃	
	85℃ to 110℃ : ± 0.5℃	More than 200℃ : ± 2.5℃	
	110℃ to 130℃ : ± 0.8℃		
Measurement / Display Resolution	0.1℃		
Measuring / Display Interval	0.5sec		
Number of Recorded Data	1800 data readings		
LCD Display	Date and Time, Measured Value, Battery Life Warning Unit of Temperature (℃ / ℉), User, Items		
Temp. Judgment LED Display	Out of Range: Red LED Blink Within Range: Green LED Blink		
Clock Resolution	Month / Day / Year / Hour / Minute / Second		
Clock Accuracy	Within +/- 1 second per day (at 25℃)		
Battery	AAA Alkaline Batteries (LR03) x 2 (AAA Ni-Cd, Ni-MH Batteries also compatible)		
Battery Life	About 1 month (when used for PUSH recording every 10 minutes for 16 hours a day)		
Interface	Wireless Communication / Optical Communication		
Optical — Communication Speed	2400bps (When downloading 1 unit of full data: about 2 minutes and 30 seconds)		
Wireless — Wireless Method	FCC Part15 Section 249, Frequency: 915MHz		
Wireless — Communication Speed	When downloading 1 unit of full data: about 6 minutes		
Wireless — Transmission Range	About 100m (if direct and unobstructed)		
Antenna	Internal Type		
Unit Water Resistance	IP64 (dust / splash resistant <rated for use in daily life>)		
Dimensions	146.8mm x 40mm x 37.9mm (excluding sensor part)		
Unit Weight	About 83g (Including 2 AAA batteries; excluding sensor)		
Operating Environment	− 10℃ to 60℃		

■ Notices about this User's Manual

- Please read this manual carefully before using the product.
- All rights of this User's Manual belong to T&D Corporation. It is prohibited to use, duplicate and/or arrange a part or whole of this User's Manual without the permission of T&D Corporation.
- Please follow the safety precautions carefully. We cannot guarantee nor are we responsible for safety if this product is used in any manner other than was intended.
- T&D Corporation accepts no responsibility for any malfunction of and/or trouble with this product or with your computer that is caused by the improper handling of this product and will deem such trouble or malfunction as falling outside the conditions for free repair of the attached warranty.
- T&D Corporation accepts no responsibility for any result or effects from using this User's Manual.
- Figures and illustrations in this manual may be slightly simplified and may differ from the actual product.
- We sincerely hope that the contents of this manual are true and complete. If you find any information to have been omitted, or if the information within is confusing or mistaken please contact your retailer or T&D Corporation.
- Please carefully read this User's Manual and Free Repair Warranty.
- The warranty that is included in this User's Manual cannot be reissued, so please keep it in a safe place.
- This manual has been written using ℃ as the standard unit of temperature.

What is RTR-61?

- Thermo Recorder Push Wireless RTR-61 is a handy-type device which acts both as a thermometer and a temperature recorder, which has been designed to easily measure and record the internal temperature of food items and liquid temperature using a needle-type sensor.
- This product has been designed to meet IP64 standards (splash resistant; rated for use in daily life). RTR-61 measures and records core temperature, which makes it suitable for use in the food production industry especially temperature management for HACCP.
- The unit incorporates a battery life warning function, which informs the user when it is time to replace the battery. When the battery power becomes low, all normal operations will stop in order to protect the data.
- The LCD Backlight allows the display to be easily read even in low light. The LCD contrast can also be easily adjusted for better viewing.
- These units are also designed with short range wireless functions that when coupled with our exclusive software set "Push Wireless Communication Set (RTR-61SK)", makes it possible to carry out wireless communication, allowing for easy and effective management of multiple RTR-61 units.

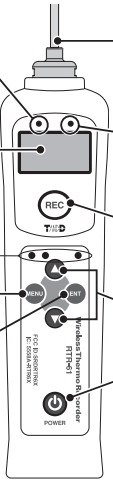
Package of Contents

RTR-61 Main Unit (Sensor attached)

AAA Alkaline Batteries (LR03) x 2

User's Manual Warranty (this document)

Part Names and Functions



Judgment LED (Red / Green)
The Judgment result of temperature measurement will be shown. Out of Range: Red LED will blink. Within Range: Green LED will blink.
* **Judgment LED Settings**
By changing settings, it is possible to turn ON or OFF the Judgment LED function.

LCD Display
The RTR-61 is designed with a graphic LCD display with a resolution of 132 x 64 pixels.
* **Backlight Function**
The LCD Backlight makes the display easier to read in low light conditions.
* **Contrast Adjustment Function**
The display contrast can be adjusted here.

<MENU> Button
By pressing this button, the Menu will be displayed. Also, press to return to the previous window.

<ENT> Button
Press to enter the settings menu or determine the settings.

A ···Optical Communication Area for communication with the Base Unit (RTR-50 / RTR-5W).
If the unit gets dirty, wipe it with a clean cloth dipped in alcohol.

Temperature Sensor
As for details about how to remove or change the sensor, please see the User's Manual that comes with the sensor you will be using.
Please be careful when handling the temperature sensor.

PUSH Record LED (Orange)
By pressing the <REC> button, the lamp will turn on when a temperature measurement is recorded.
* The recorded object is the temperature at the instant when the <REC> button is pressed.

<REC> Button (Record)
When this button is pressed, the Temperature, Date / Time, User Name, Item, and Judgment Result at the time of pressing are recorded into the RTR-61.

Cursor Buttons (Moving Up and Down)
Press to move the Cursors up and down on the display.

Power Button
Press to turn on / off the power.
* **Automatic Power-OFF Function**
If the unit is not used for about five minutes, it will automatically turn off.
* **Automatic Power-ON Function**
If a unit is OFF, when wireless or optical communication is carried out by a Management Operator, that unit will be automatically turned ON.

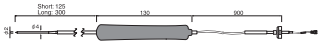
■ Temperature Sensor (Optional)

All-in-one Type Temperature Sensor
(Sensor directly attached to the RTR-61 Main Unit)

RTR-6110: Short Temperature Sensor
Sensor Length: 125mm

TR-6130: Long Temperature Sensor
Sensor Length: 300mm

Separate Type Temperature Sensor
(Sensor with Handgrip and Cord. Easy to measure temperature, even in steam.)



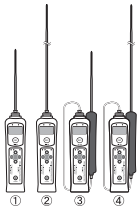
RTR-6210: Short Temperature Sensor
Sensor Length: 125mm / Cord Length: 900mm

RTR-6230: Long Temperature Sensor
Sensor Length: 300mm / Cord Length: 900mm

- Sensor Materials: Stainless pipe(SUS316)
- Handgrip Materials: Polysulfone Resin (Temperature Durability: About 170℃)
- Cord : Teflon® Resin(FEP) Shielded
- Common Items Included: Sensor Spacer 1 / Rubber Packing 1 / Sensor Replacement Tool 1 / Sensor User's Manual 1

*Teflon® is a registered trademark of U.S. company Du Pont.

■ RTR-61 Series



① **RTR-61-110 : All-in-One Short Type Set**
Main Unit (RTR-61) + All-in-One Short Type Sensor (RTR-6110)

② **RTR-61-130 : All-in-One Long Type Set**
Main Unit (RTR-61) + All-in-One Long Type Sensor (RTR-6130)

③ **RTR-61-210 : Separate Short Type Set**
Main Unit (RTR-61) + Separate Short Type Sensor (RTR-6210)

④ **RTR-61-230 : Separate Long Type Set**
Main Unit (RTR-61) + Separate Long Type Sensor (RTR-6230)

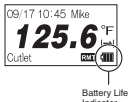
*Common Items Included:
2 AAA alkaline batteries, User's Manual (this document)

① Installing Batteries

Read the following for details about battery life and battery installation.

■ Battery Life Indicator

The battery indicator on the LCD display allows you to view the status of the battery life. If the remaining battery power becomes zero, a battery replacement message will appear. Once the message appears, please change the battery as soon as possible.



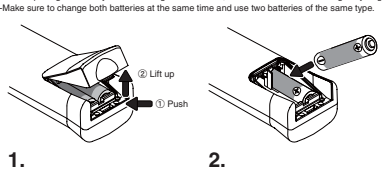
Battery Life Indicator

A battery replacement message will appear. If the batteries are further left, LCD display goes blank.

■ Installing the Batteries

NOTE

-If the LCD display goes blank and batteries are further left unchanged, recorded data may be erased. Please replace the batteries as soon as possible.
-Make sure that the + and – are in the correct direction. If the battery terminals + / - are mistaken and a short occurs, all data stored in the main unit will be erased.
-When opening the battery case to change the batteries, make sure no water or foreign object gets inside the case.
-Make sure to change both batteries at the same time and use two batteries of the same type.



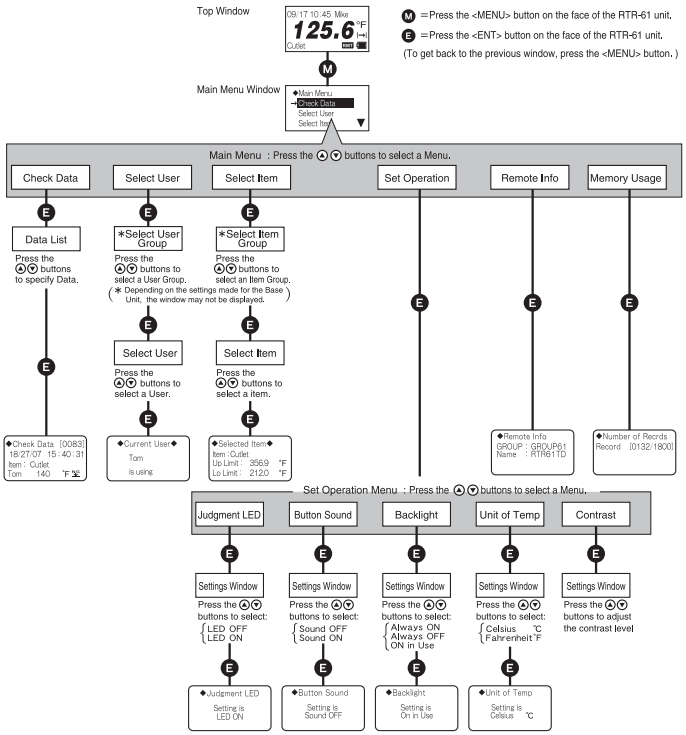
1.
Open the RTR-61 by pushing up on the bottom of the battery case on the back of the unit.

2.
Insert 2 AAA alkaline batteries, making sure that the + and – are in the correct direction. (The + of two batteries should face toward the bottom of the case).

3.
Be sure to securely close the cover until you hear a clicking sound.

② Operations Table

This is a table of operations for RTR-61. When using, please refer to the following chart.

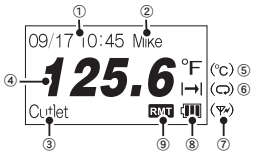


③ Main Window Names and Functions

See the following for the items displayed in the Top Window and the Main Menu Window.

■ Top Window

By turning the Power ON, the Top Window will appear. Following are the main display items and marks that appear in the Top Window.



① Current Date /Time:
The current date and time (Month / Date / Hour / Minute) will be displayed. It is not possible to make clock settings from an RTR-61 unit. The Clock Settings can be made from the Base Unit (RTR-5W / RTR-50) by the Management Operator using Wireless or Optical Communication.

② User Name :
By pressing the <REC> button, the user whose name is shown here will be recorded as the person who is making the temperature measurement. 。

③ Item :
By pressing the <REC> button, the item name shown here will be recorded as the measurement item whose temperature is being measured and recorded. While the <ENT> button is pressed, the Group Name to which the Item belongs will be displayed.

④ Current Temperature :
The currently measured temperature will be displayed.

⑤ Unit [℃ /℉] :
Select from Fahrenheit / Celsius.

⑥ Recording Mode [Endless ⊂ / Onetime |→|] :
The symbol displayed here shows Recording Mode. It is not possible to make Recording Mode settings from an RTR-61 unit. The Clock Settings can be made from the Base Unit (RTR-5W / RTR-50) by the Management Operator using Wireless or Optical Communication.

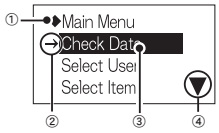
⑦ Wireless Communication in Progress [⅋] :
While wireless communication is occurring, this mark will appear.

⑧ Battery Status [▮▮▮] :
The remaining amount of battery power will appear.

⑨ Remote Mode[RMT] :
The recording of temperature measurements is being controlled by wireless communication.

■ Main Menu Window

While the Top Window is being displayed, pressing the <MENU> button on the face of the unit will display the Main Menu.



① Title:
The title of the menu will be displayed.

② Cursor:
Select the item by moving the Cursor up and down by pressing the arrow buttons < ▲ ▼ > on the face of the unit.
Press the <ENT> button on the face of the unit to select the desired menu.
Press the <MENU> button on the face of the unit to return to the previous window.

③ Highlight:
The cursor selected item is displayed in white letters on a black background.

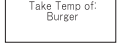
④ Scroll:
The scroll up and down arrows show that data exists outside of the display area.
▲··· Press < ▲ > button on the face of the unit to scroll up.
▼··· Press < ▼ > button on the face of the unit to scroll down.

Depending on the settings, some operations are restricted from being carried out by manipulating the buttons on the unit. Refer to the following for details:

■ Remote (Remote Mode)

When an RTR-61 unit has been set to "Remote Mode" by the Management Operator, it is not possible to use the "PUSH Recording" function without first receiving a "Measurement Command" from the Operator. Even while the power is OFF, when an RTR-61 unit receives a "Measurement Command", the LCD backlight will begin to flash and a beeping sound will notify the user that it is time to carry out a recording.
To record a measured temperature while in Remote Mode, please carry out the following procedures:

1. Measurement Command Message example



When a Measurement Command is received, push the **<ENT>** button on the face of the unit to return to the Top Window.
*The backlight blinking and beeping sound will continue until the <ENT> button is pressed.

2. Top Window

When the display switches to the Top Window, the specified item will be on display.

3.

Please measure and record the temperature of the specified item.

■ FULL when in One-time Mode

This symbol shows that the data recording capacity is full and no more new data can be recorded. In order to carry out recording again, it is necessary to first download the recorded data from the RTR-61 to the manager's computer and then delete it from the unit.

■ Button Lock Function

Because the Management Operator has placed a restriction on carrying out direct operations using the RTR-61, only the **<REC>** and **<POWER>** buttons are operable.
- Note that if a Message (see Section ⑥) or a Measurement command is received from the Management Operator, the <ENT> button will become operable.

④ About PUSH Recording Window

This window will appear by pressing the <REC> button on the RTR-61 unit to record temperature.

■ Recorded Temp

(Displayed normally after PUSH Recording)

The recorded temperature is displayed for about three seconds; after which the unit returns automatically to the Top Window.

- If the Button Sound has been set to "ON", the unit beeps when recording temperature.

■ Wait for Temp

(Measuring in progress and waiting for the constant temp)

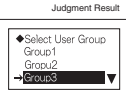
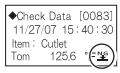
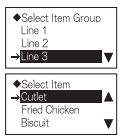
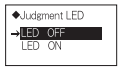
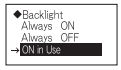
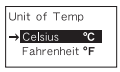
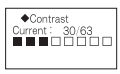
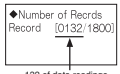
If the "Wait for Constant Temp Function" has been applied to your RTR-61 unit by the Management Operator, this message will be displayed while waiting for the temperature measurement to stabilize.

Do not remove the sensor while "Wait for Temp" is on display and the PUSH Record LED is blinking.

- When the "Wait for Constant Temp Function" is active, the temperature will not be recorded until temperature stabilization has been achieved. Due to this, after pressing the <REC> button it may take some time before the temperature is actually recorded.
- If the temperature is not stabilized after 15 seconds have elapsed, recording will not be performed and you will be returned to the Top Window.
- If the Button Sound has been set to "ON", the unit beeps both when the "Wait for Temp" operation has been started and when the temperature has been recorded.

⑤ Menu Contents

Details about the Main Menu and the Operational Settings Menu are as follows.

Menu	Settings Window	Details
Check Data	 The 83rd data reading is highlighted by the cursor.	**Data List** All recorded data is displayed in descending order (from the newest to the oldest data). Specify data by moving cursors and press the <ENT> button to view detailed information.
	 Judgment Result	**Check Data** Data details (Date/Time of Recorded Data, Measurement Item, User Name, Temperature, and Judgment Result) can be viewed. OK···Judgment OK NG···Lower Limit Error NG···Upper Limit Error
Select User		Select and set the User Name of the person who will measure and record temperature. If User Registration has been made by creating Groups from a Base Unit, first, select the Group Name from the list in the [Select User Group] window. Then select the User Name from the list in the [Select User] window.
Select Item		Select and set the Measurement Items. If User Registration has been made by creating Groups from a Base Unit, first, select the Group Name from the list in the [Select Item Group] window. Then select the User Name from the list in the [Select Item] window. - While the <ENT> button is pressed in the Top Window, the Group Name to which the Item belongs will be displayed.
Set Operation		**Judgment LED** It is possible to turn ON / OFF the blinking of Upper and Lower Limit Judgment LED.
		Button Sound It is possible to turn ON / OFF the beep which sounds when pressing a button.
		**Backlight** The Backlight factory default setting for the RTR-61 is "ON in Use", which will backlight the window for 3 seconds only when in operation. Here you can shift the setting to "Always ON" or "Always OFF".
		**Unit of Temp.** Select Fahrenheit [°F] or Celsius [℃].
		**Contrast** It is possible to adjust the contrast of the display.
Remote Info		Before carrying out wireless communication, it is necessary for the Management Operator to register RTR-61 units as Remote Units and register them into Groups. The Group Name and Remote Unit Name can be viewed here for the RTR-61 unit being used.
Memory Usage	 132 of data readings are recorded.	Each RTR-61 can record and store up to 1,800 of data readings. The number of stored data can be viewed here.

⑥ About Message Display

Even when the power is OFF, an automatic Power-ON may occur to display a message.

■ Created Messages

The RTR-61 unit can receive any created message from the Management Operator. They will continue to be displayed until the <ENT> button on the face of the unit is pressed.

- By making the backlight light up or the beeping sound occur, the user can be informed that a message has been received.
- Messages can be received regardless of any mode settings in the RTR-61.
- Note that there is no message storing function, so messages will not be redisplayed once you press the <ENT> button.

■ Settings Change Messages

If any settings changes have been made via wireless / Optical communication to the RTR-61 unit in use, a notification message will be displayed for about two seconds. After that, you will be automatically returned to the Top Window.

- Messages will be displayed regardless of any mode settings in the RTR-61.

⑦ Measurement Error Messages

If a temperature measurement error occurs, there may be a poor sensor connection. In such a case, an Error Message will appear.

Check the sensor connection.